DOCUMENT RESUME

ED 092 293 RC 007 943

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TITLE Effects of Attitude and Intelligence Variables Upon the English Language Achievement of Alaskan Eskimo Children.
PUB DATE Jan 72
NOTE 68p.; Master's Thesis, San Jose State College, San Jose, California

EDRS PRICE ~~MF-$0.75 HC-$3.15 PLUS POSTAGE~~
DESCRIPTORS *Bilingualism; Child Development; *Cognitive Development; Comparative Analysis; Cultural Factors; *Cultural Pluralism; English (Second Language); *Eskimos; Intelligence Level; Native Speakers; Performance Factors; Rural Areas; *Self Concept
IDENTIFIERS *Alaska

ABSTRACT

In recent years there has been increasing interest in the effects of bilingualism on cognitive growth and on the bilingual's attitude toward himself and his 2 language communities. One of the most widely quoted studies on bilingualism is that of Peal and Lambert (1962) who dealt with the relation between intelligence, attitude, and achievement in English as a second language for French Canadian children in Montreal. This 1972 study investigated whether the results of that study, which examined urban middle-class children who shared a western European background with their second language community, could be applied to village Eskimo children learning English. Fifty -six 10 year old Eskimo children in 6 villages in southwestern Alaska were tested and their families interviewed. All testing and interviewing was done in Yupik dialect by natives of the area. The conclusions of the Peal and Lambert study were not found to be directly applicable to Eskimos, although there were some similarities. For village children, attitude, in terms of desire to emulate the white's way of life, is related to the mastery of form, but not to the mastery of the content, of English. Attitude toward self emerged as a significant factor affecting the performance of Eskimo children on measures of mental ability and in achievement in the meaningful use of English. (KM)

ED 092293

EFFECTS OF ATTITUDE AND INTELLIGENCE VARIABLES UPON THE ENGLISH LANGUAGE ACHIEVEMENT OF ALASKAN ESKIMO CHILDREN

A Thesis

Presented to

the Faculty of the Department of Psychology

San Jose State College

In Partial Fulfillment

of the Requirements for the Degree

Master of Science

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by

Norma Forbes

January 1972

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ACKNOWLEDGMENTS

I would like to express my appreciation to the Rural Schools Project of the University of Alaska that funded this study, and to the members of my committee, Walter T. Plant, Brant Clark, and James Orvik. Dr. Orvik, as the only resident member of my committee, was particularly helpful.

A very special thanks is due Miss Irene Reed, her staff, and her students in the 1970-71 program for bilingual teachers: Joe Alexi, Moses Kritz, John Bavilla, Martha Bavilla, Mary Toyukuk, Nancy Gamechuk, Helen Jimmy, and Sadie David. These students, together with Miss Reed, spent many hours translating and modifying the test instructions. Their suggestions were uniquely valuable in planning and executing this study. These same students also did all testing and interviewing. Without their participation, this investigation would not have been possible.

TABLE OF CONTENTS

CHAPTER		PAGE
I	INTRODUCTION	1
	Background of the Problem	1
	Ethnic and Socio-economic Characteristics of the Eskimo of the Southwest Coastal Region of Alaska	4
	Statement of the Problem: Identification of the Hypotheses	5
II	SURVEY OF RELATED LITERATURE	9
	Effects of Attitude on Second-language Acquisition	9
	Cross-cultural Measures of Intelligence	11
	Racial Experimenter Effects in Testing	14
	Measures of Attitude	15
III	METHOD	18
	Subjects	18
	Test Administrators	21
	Measures of English Language Achievement	22
	Measures of Mental Ability	22
	Attitude Measures	24
	Testing Procedures	27
	Statistical Procedures	28

TABLE OF CONTENTS--Continued

CHAPTER		PAGE
IV	RESULTS	32
V	DISCUSSION	38
VI	SUMMARY	50
REFERENCES		53
APPENDICES		58
	Appendix A. Village Demographic Data	59
	Appendix B. Scale Format, Osgood Semantic Differential	60
	Sample Interview with Parent	61
	Appendix C. Multiple Range Tests to Group Means .	62

LIST OF TABLES

TABLE		PAGE
1.	Study Variables	28
2.	Means, t Values, and Associated Probability Levels for Males and for Females	32
3.	Means, t Values and Probability Levels for Groups Above (Positive) and Below (Negative) the Median on Attitude Toward the English Language Community	34
4.	Means, t Values and Probability Levels for More-similar and Less-similar Groups (Perceived Similarity) on English Achievement Variables	35
5.	Correlation Matrix of Achievement, Mental Ability, and Perceived Similarity (D-scores) Variables	37
6.	Means, t Values, and Probability Levels for More-similar and Less-similar Groups on Mental Ability and Attitude Variables	43
7.	Mean Scores by Village	47

LIST OF FIGURES

FIGURE PAGE

1. Map showing locations of villages used in this study 20

CHAPTER I

INTRODUCTION

Background of the Problem

Only 30 years ago the Native population of Alaska, the Indian, the Aleut, and the Eskimo, outnumbered the non-Native; now four-fifths of the more than one-quarter million people of Alaska are non-Native. To the average American the rural or "bush" area of Alaska seems as remote from change as any place could be in the world today. Yet, for the Native population of these areas, change is and has been occurring at a bewildering rate. World War II brought the first land link with the rest of the United States, the Alcan Highway, along with a surge of radio, airplanes, and military personnel to the more remote areas in the bush. Government programs of that period brought further disruptive change based on a policy which was described by Oliver (1959) as "attempts to compel the Tribesmen to acculturate themselves to the general American culture by abolishing Indian culture, while hoping that the resulting vacuum will be properly filled. . ." (p. 245). In the 1950s the Defense Early Warning System (DEW line) and White Alice communication stations were built in remote areas of the north which also increased Native contact with white Americans and their culture, and usually to their disadvantage.

Then in 1968 oil was discovered at Prudhoe Bay, and the rest of the world suddenly rediscovered Alaska. This time change

brought with it a promise of direct benefits to the Native population from possible payments for use of claimed tribal lands. Although final action has not been taken on the Alaska Native land claims, there is little doubt that some financial and legal settlement will be made and that the Native population will realize enormous benefits. Those who supervise the educational system have the task of helping the Native prepare for the problems and responsibilities which will accompany this wealth.

Fortunately the current government policy which shapes programs for the Natives is more positive than that which was previously quoted. The current policy is illustrated in Congressional Resolution 11 (Federal Field Committee for Development Planning in Alaska, 1968), which states

> that Indian culture and identity will be respected; that the necessary technical guidance and assistance will be given . . . and that a long-term general vocational, technical and professional education program will be encouraged and developed for both old and young American Indians and Alaskan Natives so that they may share fully in our society (p. 441).

To implement this policy, the Alaska State Department of Education and the Bureau of Indian Affairs are proposing a pilot bilingual instruction program for the southwest coastal region's schools.

Widespread use of Native languages is characteristic of rural Alaska, and except for conversation with government people or other whites, so is the avoidance of English. English is in reality a second language for most of the Natives of the southwest coastal region although the schools have not previously taught it as such. An interviewer in Hooper Bay, for example, reported that

nearly one-third of the adults spoke English poorly or not at all (Federal Field Committee, 1968). There is no doubt, however, of the Native's recognition of the need for education and facility in the English language.

The valedictorian at Mountain Village, a southwestern Eskimo community of about 400 persons, expressed it this way:

> More and more we find a greater and greater need for the English language and formal education. The main reason for this is that most other Americans, including the Government, knows just one language--English. So we have to learn the language to keep in touch with the rest of the world thru radio, newspapers, magazines, letters and movies.
>
> For our own generation a great deal of knowledge will be necessary. Not only do we need to think in two languages, but we will have to act in two languages also. It isn't good to believe all one hears. People often come to our village with ideas, plans and promises. A responsible person should be able to see whether these are facts or exaggerations. We, and only we, should decide what is good for us and our community (Federal Field Committee, 1968, p. 69).

The Natives' mixed attitudes toward the English language are illustrated by a quote from a young native leader in a southwest Eskimo village:

> When talking with white people those who speak English will use it, but they avoid it in talking with one another, particularly if older persons are nearby. They don't want to be shamed for acting like a gussuk [a white man] (Federal Field Committee, 1968, p. 43).

This attitude assumes crucial importance for the instructional programs when one examines the evidence that the monolingual may be retarded in his acquisition of a second language because of his unfavorable attitudes toward both the other culture and its language (Peal & Lambert, 1962).

Ethnic and Socio-economic Characteristics of the Eskimo of the Southwest Coastal Region of Alaska

Eskimos constitute about half of the total Native population of Alaska. The residents of the southwest coastal region, primarily Eskimo, compose about 29% of the rural Native people in Alaska and about 20% of the total Native population. The Native population of the region is distributed among 41 villages and Bethel is the largest of these. More than 1,500 Natives live in Bethel, while other villages may have as few as 40 residents (Federal Field Committee, 1968).

Anthropologists view Eskimo culture as unitary from Alaska through Greenland, based on the unchallenged separateness of Eskimo speech and marked racial differentiation from other American natives (Kroeber, 1939). Linguistically, there are two Eskimo groups, (1) the Inupik, who speak the northern dialect, and (2) the Yupik-speaking peoples of the southwest. The Ss for this research were selected from the Yupik-speaking peoples (Federal Field Committee, 1968).

Historic contact with the region may be dated from 1840 or 1842 when Russian administration was achieved by Kolmakov. Purchase of Alaska in 1867 briefly disrupted patterns of influence in the region but the effect of foreign cultural ways was relatively minor (Federal Field Committee, 1968).

The report of the Federal Field Committee for Development Planning in Alaska (1968) is the latest and most comprehensive source of information about rural Alaska. It stated that Native survival in the southwest area still depends on the environment and presented the following statistics. Joblessness in village Alaska approaches 80 to 90% in the winter and drops to 25% in the summer. In the Eskimo village of Hooper Bay, included in this study, half of the households averaged less than $2,000 annual cash income, and only 15% received more than $3,000 (U. S. Public Health Service, 1966). These are low economic status incomes in an area where basic commodity prices range from 50 to 75% higher than in Seattle. One out of 11 Native adults receives public assistance. The health status of the Alaskan Native is indicated by the average age of death, which is 34.5 years, about one-half that of other Americans. The Eskimos' economic status was described by Sargent Shriver during a visit to Nome as director of the U. S. Office of Economic Opportunity as "the most abject poverty I've seen anywhere--including Africa, Latin America, India or anywhere else" (Federal Field Committee, 1968, p. 73).

Statement of the Problem: Identification of the Hypotheses

Gardner and Lambert (1959) presented evidence that ratings of achievement in a second language were equally related to a "linguistic aptitude" factor and a "motivational" factor. Peal and Lambert (1962), in their definitive study of the relation of

bilingualism to intelligence, stated that attitudes play as important a role as intelligence in the acquisition of English as a second language for French Canadian children. Using Osgood's Semantic Differential technique as a measure of attitude, they also found that a monolingual child does better in his acquisition of a second language if he sees himself, his first language community, and his second language community as similar.

Interest in the problems of bilingualism and the acquisition of English as a second language is particularly strong among educators and behavioral scientists working in Alaska. The high proportion of non-English speaking citizens, the differences in degree of acculturation and traditional life styles of its aboriginal peoples, and the rapid rate of change in this frontier state make these problems unusually challenging. Educators in both Bureau of Indian Affairs schools and state operated schools are attempting to meet this challenge by use of innovative programs such as bilingual instruction.

Studies such as those previously mentioned have used middle-class children who shared a common cultural background with the second language community. Whether the conclusions from such studies are applicable to rural Eskimo children of low socio-economic status is the general question to be examined in this study.

Although Peal and Lambert (1962) did not report sex differences in response to Osgood's Semantic Differential, Havighurst

(1971) found differences between Indian boys and girls in ratings on the Strong-Weak scale. He also noted that the scores of Latin Americans show a relatively large sex difference. Sex differences in the responses of normal (non-neurotic) adult Ss have been found in studies using the D-score from Osgood's Semantic Differential to measure parental identification (Shell, O'Malley, & Johnsgard, 1964). Differences in the studies cited were in the direction of less positive self ratings for females than for males. Additional differences in ratings of ethnic groups, one's own as well as others, might well result from the differential acculturation experiences accorded female and male members of minority groups by the dominant culture. The first hypothesis is addressed to these aspects of the problem.

Hypothesis I. There will be significant differences in attitude toward self, Eskimos, and the English language community (Whites) reported by male Eskimo Ss and female Eskimo Ss.

Peal and Lambert (1962) found the positive relation they had predicted between attitude toward English Canadians and achievement in English for French Canadian children. The second hypothesis predicts a similar relation for Eskimo children.

Hypothesis II. Eskimo Ss with more positive attitudes toward the English language community (Whites) will achieve higher scores on English language performance measures than will Eskimo Ss with less positive attitudes toward the English language community.

For French Canadian monolinguals, as defined by Peal and Lambert (1962), there is a significant correlation between achievement in English and degree of perceived similarity between self and English Canadians, as well as degree of perceived similarity between French Canadians and English Canadians. The Eskimo children used as Ss in this study would be classified as monolinguals by Peal and Lambert and a similar relation between perceived similarity and achievement is expected.

Hypothesis III. Eskimo Ss who see themselves and the Eskimo community as similar to the English language community (Whites) will achieve higher scores on English language performance measures than will those who do not.

Peal and Lambert (1962) also found that the correlation between achievement in English and degree of perceived similarity was greater than the correlation between achievement in English and measures of mental ability for French Canadian monolinguals. This relation may also be present for Eskimo Ss.

Hypothesis IV. Seeing oneself and the Eskimo community as similar to the English language community (Whites) will be more highly correlated with achievement in English than will mental ability measures for Eskimo Ss.

CHAPTER II

SURVEY OF RELATED LITERATURE

Effects of Attitude on Second-language Acquisition

Until recently, most studies on second-language acquisition have emphasized linguistic aptitude or related measures of intelligence. Although the influence of attitude toward the second language community on second language learning was discussed as much as 35 years ago, systematic studies of attitude as a variable in second-language acquisition have not been reported until the last 10 years. One of the earlier discussions of this problem was presented by Arsenian (1937), who noted that

> National, religious and political sympathies or antipathies determine the affective tone of the attitude of a bilingualist toward a second language and they introduce, therefore, important differences among bilinguals (p. 36).

Later, Christopherson (1948) pointed out that a bilingual person belongs to two different communities, and possesses two personalities which may be in conflict if the two language communities are in social conflict. He also argued that changes in the bilingual's attitude toward a language community may account for variations in his efficiency in the use of that language. The results of studies by Lambert, Hodgson, Gardner, and Fillenbaum (1960), and Ansfield, Bogo, and Lambert (1961) suggest that certain community-wide negative stereotypes toward speakers of a particular language

may have a negative influence on the bilingual who uses that language. This is particularly relevant in view of the comment of the young Eskimo who was previously quoted, "They avoid it [English] when talking with one another . . . . They don't want to be shamed for acting like a gussak [white man]." Peal and Lambert (1962) make the point that the bilingual

> may be aware of the ridicule coming from others when he uses that language and this may constitute an intellectual interference in that language for him. This could have a detrimental effect for the bilingual when functioning in one of his languages if he had associations of inferiority or shame with that language (p. 7).

Problems of identity and self-esteem associated with dual-cultural membership have been widely discussed by behavioral scientists in many fields. Discussions of the effects of perceived discrepancy between self, one's own ethnic group, and the dominant ethnic group are to be found in case studies (Sommers, 1964) and numerous anthropological reports. Most discussions have involved the relationship between perceived discrepancy and mental health, but authorities in the field of psycholinguistics have pointed out a relationship between attitude toward self and intellectual functioning as well. Diebold (1966), in a review of the evidence for acculturative pressures on bilingual communities, states, "that sociolinguistic factors can and do profoundly affect cognitive development in general and verbal skills in particular cannot be doubted" (p. 20). Yet few controlled studies of the relationships between these factors are available.

Cross-cultural Measures of Intelligence

The selection of measures of intelligence is one of the most difficult problems in the design of a study of a group which differs in culture from the majority of Americans. A practical approach may be that of Jensen (1969), who argued,

> The best we can do is obtain measurements of certain kinds of behavior and look at their relationships to other phenomena and see if these relationships make any kind of sense and order (p. 6).

When there is a limited ability to use English as a second language and the first language differs from English in origin and conceptual framework, performance measures seem to be more appropriate than verbal tests. Nonverbal tests which do not require extensive verbal instructions are particularly appropriate for this study as 39% of the Eskimo children in the area have been found to have a moderate to severe hearing loss (Brody, Overfield, & McAlister, 1965). The effect of time limits is another factor to be considered in selecting a measure of intelligence for Ss from a culture different from that of Ss on which the test was standardized. Knapp (1960) found a differential effect resulting from the imposition of time limits on the test performances of Mexican and American groups. One test which meets the desired criteria (i.e., nonverbal, no time limits and directions which can be pantomimed) is Raven's Progressive Matrices. Jensen (1969) considers it a good example of a test which measures "general intelligence" in nearly pure form. MacDonald and Netherton (1969) used the Raven's Matrices in the educational assessment of elementary school pupils in the

Canadian North and found mean scores to be similar for Native (Eskimo and Indian) and non-Native students. They felt they had found an "Intellectual Potential" factor which was measured by the Raven's, but not by the more verbally loaded standardized achievement tests. Martin and Wiechers (1954) reported .83, .84, and .91 correlation coefficients respectively between scores from the Raven's Matrices and the Performance, Verbal, and Full Scale scores of the Weschler Intelligence Scale for Children (WISC). Orvik (1970) found the Raven's Matrices scores do correlate significantly with scores from verbal measures if verbal ability is measured in the native language (Eskimo). Other investigators have reported lower, but still positive correlations, between the Raven's Matrices scores and scores from widely used standardized intelligence tests.

Two investigators (Berry, 1966; Vernon, 1966) have noted the Eskimos' relative superiority in perceptual skills and spatial ability over other aboriginal or non-Western groups. Berry found no significant differences between the performance of Eskimos and rural Scots on Kohs Blocks and Raven's Matrices, while the performance of his African Ss was markedly lower. Vernon (1965) found that both Canadian Eskimo and Indian boys scored much higher than Jamaican boys on Kohs Blocks and other spatial tests. In 1966 Vernon reported that the Eskimo mean score of 98 on the Porteus mazes was little below the white mean. One group, the Tukoyaktuk boys, had a mean of 102. Kleinfeld (1970) reviewed both the

anecdotal and the empirical evidence of the Eskimos' superior perceptual skills and urged use of instructional techniques which would build on their cognitive strengths in this area.

In contrast, the Federal Field Committee's 1968 report states,

> standard metropolitan tests administered in 1965 to students in Bureau of Indian Affairs primary schools show levels of performance in the upper primary grades one to two grade levels below medians established nationally (p. 7).

Maze performance has also been used widely as a cross-cultural test of intelligence (Porteus, 1959). A study done by Kunce, Rankin, and Clement (1967) offers unique data on this type of "culture-fair" test with criterion related validity based on the adult Eskimo. Performance on Peter's Circular Mazes was shown to be significantly related to demonstrable political, economic, and social leadership among Eskimos from Hooper Bay and Tununak. Additionally, the mean maze score for the total Native group was 48.39 (adult American mean = 50) in spite of a mean educational level of 4.8 years.

The accumulated evidence suggests that Raven's Matrices, Peter's Circular Mazes, and Kohs Blocks, or closely related tests can be used as reasonably "culture-fair" tests of intelligence for Eskimo Ss.

Racial Experimenter Effects in Testing

Recent evidence indicates that effective use of "culture-fair" tests with non-Caucasian Ss can be marred by naive selection of test administrators. Sattler (1970) reviewed studies dealing with racial E effects on task performance scores, and concluded that white Es frequently impede the performance of Negro children in a variety of tasks. Research results are mixed in relation to intelligence tests but a number of authorities in the field (Anastasi, 1968; Hilgard, 1957; Pettigrew, 1964) have suggested that examiner-examinee relationships may play an important role in intelligence testing. Five of the seven studies involving attitudes or preferences reviewed by Sattler showed differences associated with the race of the examiner.

Appearance alone may not be the only factor operating in cross-cultural testing situations. Differences between persons from different cultures in posture and gesture and their effect on communication have been widely discussed as much as 20 years ago (LaBarre, 1947). Such differences may be particularly important for village Eskimos who maintain their cultural identity and patterns of behavior to a much greater extent than the majority of aboriginal peoples in the United States. Collier (1970) has done a film evaluation of Eskimo education with emphasis on Kinesics, the language of posture and gesture, and Proxemics, the language of space. He pointed out gross differences in posture and interpersonal space between Eskimo and non-Eskimo teachers with

associated differences in the responsiveness of the children. Kleinfeld (1971) has worked with Eskimo interviewers for Eskimo students. It was her impression that there are differences in eye contact and in the pace of the interview between Eskimo and non-Eskimo interviewers. In two studies, which involved testing Eskimos, there were comments on rapport problems although poor rapport was not considered in the interpretation of the results (Feldman & Bock, 1970; Greenfield, Reich, & Olver, 1966).

Since the current study involved both mental ability measures and attitude measures, it seemed advisable to guard against racial or cultural E effects by using like-race examiners.

Measures of Attitude

Peal and Lambert (1962) used summed and differential evaluations from Osgood's Semantic Differential to determine their Ss' attitude toward self, own ethnic group, and the second-language ethnic group. They also used Osgood's D-scores as a measure of perceived similarity or identification.

D-scores have been widely used as a measure of perceived identity or discrepancy between self and parents. Most studies in which the Semantic Differential has been used have been concerned with inadequate parental identification as a determiner of neurosis, although Bronfenbrenner (1958) pointed out that such scores are likely to be primarily a function of the subject's self-esteem. The results of such studies have consistently pointed out a relation between perceived discrepancy and mental health. Luria (1959)

concluded: "devaluation of self and parents may well be diagnostic of people in trouble" (p. 219). Manis (1958) reported: "the adjusted subjects felt they were more highly esteemed by their parents than did the maladjusted subjects" (p. 484). The study by Shell, O'Malley, and Johnsgard (1964) served to clarify what was being measured by the Semantic Differential in the aforementioned studies. Their own experimental investigations and their review of the results of the investigations of others indicated that measured D-score differences between normal and neurotic groups could be accounted for in terms of a "distance-from-positive-concepts" explanation, and measured differences in "inferred identification" could well be incidental. Although Peal and Lambert (1962) used the scores derived from the Semantic Differential as a measure of inferred identification between self, one's first language community, and one's second language community, their results would be consistent with the "distance-from-positive-concepts" explanation as well.

The Semantic Differential has also been used in studies of minority group children. Adams (1967) found a lower evaluation of "how his classmates saw him" and 'peers' for the lower achiever in two groups of seventh grade students, Anglo-American and Mexican-American. He did not derive a D-score or discuss inferred identification between the two ethnic groups. More recently, Havighurst (1971) and Dryer (1971) have used the Semantic Differential in a study of self-image or "phenomenal self" of American

Indian students. They found no reliable differences between Indian boys and Anglo-American boys of the same socio-economic level. For girls there was a statistically reliable difference, the Anglo-American girls rating themselves more favorably. Havighurst and Dreyer used comparisons of summed evaluations of "self" and other concepts rather than Osgood D-scores. Summed evaluations are subject to many of the criticisms of rating scales, including the bias introduced by scale-checking style (Stagner & Osgood, 1946).

CHAPTER III

METHOD

Subjects

The Ss of this study were the total populations of 10-year-olds enrolled in school in six selected villages. Eskimo was the first or exclusive language used in the home for all Ss. All Ss spoke both English and Eskimo but are best described as pseudo-bilingual as defined by O'Doherty (1958). The pseudo-bilingual knows one language much better than the other and does not use his second language for communication.

The Ss were selected without regard to grade placement. MacDonald and Netherton (1969) found the average age-grade placement of their Native group to be more than one year below that of their non-Native group. Thirteen of the Ss of this study were in the third grade, 42 in the fourth grade, and one in the sixth grade.

Family educational background was to have been controlled by using only those Ss whose parents' schooling did not extend beyond the eighth grade; however, only one S was eliminated under this criterion. Ten Ss were eliminated because of omissions or errors in testing, leaving a total of 56 (24 girls and 32 boys).

The six villages were selected from the Yupik dialect area on the basis of size, accessibility, expense involved in transporting test administrators, and willingness of school administrators

to allow children to be tested. The latter was a factor only in the selection of the two villages west of Bethel as extensive testing programs being carried on by the Bureau of Indian Affairs in that area made it inconvenient for some schools to accommodate testers from this study. Figure 1 is a map of the area showing locations of the villages used. Kwigillingok and Kongiganak were historically one village and thus are treated as such in the statistical analyses.

The six villages fall into three groups on the basis of geography, economic bases, and religion. Manokotak, Togiak, Kongiganak, and Kwigillingok are devoutly Moravian villages. The Moravian church services are held in Eskimo and the pastors of the churches are Eskimos who are held in high regard in their village. The Moravian church strongly disapproves of the use of alcohol, and its sanctions are usually firmly enforced by the village council. Manokotak and Togiak are, and historically have been, easily accessible to one another and there is much intermarriage. They also share a strong economic base in the Bristol Bay fisheries and canneries.

Kwigillingok and Kongiganak are geographically isolated from the other four villages in this study and their economy is depressed in comparison to that of the Bristol Bay villages.

Hooper Bay and Chevak are only 28 miles apart and there is constant snowmobile traffic between them in the winter. They are Catholic villages, served by the same priest. The church has

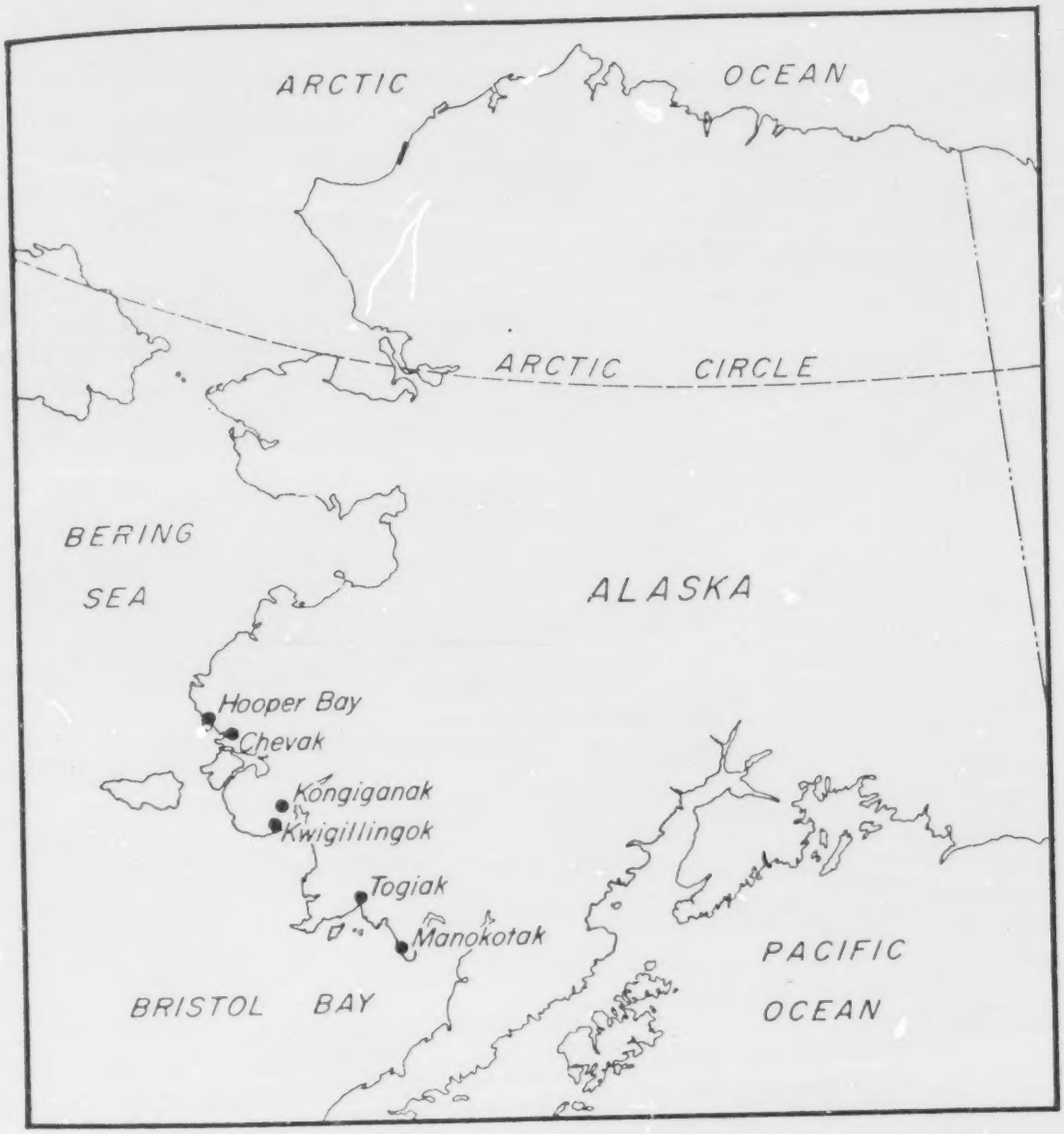

Figure 1: Map showing locations of villages used in this study.

played a paternalistic role in these villages and only this year has taken an Eskimo into training for the priesthood. Alcoholism is a constant problem and the residents are considered to be more "deculturated" (Hippler, 1971) than residents in the Bristol Bay villages. The economy is depressed and the region has little in the way of resources to be developed.

The mean cash income for Ss' parents in all the villages was $2,300. The mean number of years of education was 3.4 for the mothers and 2 for the fathers.

Test Administrators

All testing and interviewing was done by Eskimo test administrators native to the general area in which the study was done. The testers were volunteers from a group of college-age participants in a program designed to train them as teachers in a new bilingual teaching program for village schools. Manokotak, Togiak, Kougiganak, and Kwigillingok were home villages for the people who tested there. Interviewing in Hooper Bay and Chevak was done by the three testers from Togiak, with the assistance of local young people whom they had known from boarding high school. Appendix A includes the names of those who tested in each village as well as demographic data for each village.

Testers were trained during fall semester 1970 at the University of Alaska. One-hour sessions were held on a three-times-weekly basis throughout October, November, and the first part of December. During these sessions the testers worked out translations and

modifications of the test instructions as well as practicing the administration of tests. Each tester received an individual "final examination" during which he or she administered the entire battery to a child under the supervision of the investigator. The students received a fee of $5.00 for each child who was tested in the villages.

Measures of English Language Achievement

Teacher ratings. The teacher in each class from which Ss were selected was asked to rate her students on achievement in English along a five-point scale relative to average Eskimo 10-year-old achievement. Two ratings were requested, a rating on oral usage and a rating on reading comprehension.

Verbal proficiency. Grammatic Closure and Auditory Association subtests of the Illinois Test of Psycholinguistic Ability (ITPA) were individually administered to measure verbal proficiency in English. The Grammatic Closure subtest assesses the child's ability to make use of the redundancies of oral language in acquiring automatic habits for handling syntax. Auditory Association taps the child's ability to relate concepts presented orally by manipulating linguistic symbols in a meaningful way (Kirk, McCarthy, & Kirk, 1968).

Measures of Mental Ability

The Raven's Coloured Progressive Matrices (RCPM) (Raven, 1947) was group administered in all schools. All Ss passing six out of

twelve items on Set B of the RCPM were administered Sets C, D, and E of the Raven's Standard Progressive Matrices (RPM) (Raven, 1938). This procedure was intended to make the matrices a more valid measure for the more capable Ss and to extend upward the low ceiling of the RCPM.

As a result of this method of administration, three sets of scores were available: a total score from the RCPM, a total score from the combination of the two series (Sets A, Ab, B plus C, D, and E) and a score equivalent to the complete RPM (Sets A, B, C, D, and E). The three sets of scores were checked for skewness and kurtosis, and the most normal distribution was selected for use in the statistical analyses. The total score from the combination of the two series was selected, but the total scores from the RCPM are also reported to allow comparison with Raven's norms. Of the children tested, 69% passed six or more items on Set B of the RCPM. The RPM is probably the more appropriate instrument for testing Eskimo 10-year-olds, at least when Eskimo test administrators are used.

The Maze subtest from the Weschler Intelligence Scale for Children (WISC) was substituted for the Porteus mazes for reasons of economy and expediency in obtaining test materials. Time limits were not used which tended to limit the range of scores. The obtained range was from 8 to 17. There was some difficulty in establishing uniform scoring standards and the test, as used in this study, is not felt to be a satisfactory measure of ability.

The Weschler adaptation of the Kohs Block Designs from the WISC was individually administered at the same time the subtests from the ITPA were presented. Standard procedures and time limits were used.

Attitude Measures

Three attitude measures were employed using Osgood's semantic differential technique (Osgood, Succi, & Tannebaum, 1957).

1. Evaluation of self (Wiinga)
2. Evaluation of English language community (Whites or Kassiq)
3. Evaluation of Eskimos (Yupik)

The Ss rated each of these concepts on twelve bipolar scales, each scale having seven points. The concepts were judged on scales defined with adjective opposites (i.e, good-bad, brave-cowardly), presented in both languages. Selection was made on the recommendation of a cultural anthropologist, an Eskimo language instructor, and the Eskimo test administrators. A sample of the scale format is included in Appendix B.

The scales selected were similar to those used by Peal and Lambert (1962) and stress Osgood's "evaluative" factor. Each adjective pair was scored from 1 to 7 with "7" the most positive score. The evaluation of each concept is the summed ratings assigned by each S on all 10 scales. Differential evaluation was obtained by subtracting the evaluation of the concept listed second from the evaluation of the concept listed first and adding 50.

A score above 50 indicates the first concept was rated more favorably than the second. Osgood D-scores (Osgood & Succi, 1952) were calculated to give a score for inferred identification as used by Peal and Lambert. The D-score may also be interpreted as a measure of self-esteem, as discussed in Chapter II. The D-score is a method which takes in account not only profile similarity among sets of measures but their mean differences. A high D-score indicates greater semantic difference between two concepts or less similarity between them. A low score shows closer identification of the two concepts, as discussed by Lazowick (1955).

Additional information about attitudes was obtained from a questionnaire of the following items:

1. Name the person you would most like to be when you are grown.
2. What kind of job would you like to have when you are grown?
3. Where would you like to live when you are grown?

The questionnaire was designed to assess orientation toward a White way of life as opposed to traditional Eskimo life patterns. Responses to the questionnaire were assigned to one of three categories: Eskimo way of life, White way of life, or compatible with either Eskimo or White way of life. Responses were categorized by each of the Eskimo test administrators and their categories pooled. The higher scores indicate an orientation toward the White way of life, e.g., taxi driver in Anchorage.

Parents of each of the Ss tested were interviewed by the Eskimo test administrators. A sample of the interview form is included in Appendix B. Parents' attitudes toward Whites, Eskimos, and Indians were sampled by use of a modified Bogardus scale, on which they indicated their acceptance of each ethnic group as: marital partners, friends, co-workers, neighbors, tenants, and political candidates. This scale cannot be considered a "social distance" scale as originally proposed by Bogardus as many Eskimos were willing to accept Whites as friends or as tenants while rejecting items on either side of these. It was, however, a convenient framework for use when asking questions embarrassing to both the interviewers and the respondents. Scores from 1 to 7 were assigned to each acceptance question with the highest score assigned to acceptance of an ethnic group member as a spouse. The maximum score, acceptance for all categories of response, was 28. Although the scale was originally proposed as a measure of the mother's attitude toward Whites, the Eskimo interviewers pointed out that the father would answer questions of this type if he were present. They felt that, even in the absence of the father, the response to such a question would represent the combined views of the parents in an Eskimo household.

Each interviewee was asked the occupation of each parent and an approximation of the family's cash income. Father's occupation was ranked from 1 to 10 according to its status in the Eskimo community by the test administrators, using a Q-sort technique. This

rank was combined with parents' cash income and years of education to give a rough measure of socio-economic status.

Johnson's Reaction Time Test (Johnson, 1953) was originally suggested for use as a measure of bilingual proficiency of the mother. Miss Irene Reed of the University of Alaska's Department of Linguistics and Foreign Languages advised that such a test would not give the measure desired because of the differences in structure, pace, and word length in the two languages. That portion of the interview was deleted.

Testing Procedures

All testing and interviewing was done between December 20, 1970, and January 10, 1971. Permission for testing was obtained from the principal of each school prior to the arrival of the testers in the village. The testers worked as teams, each member of the team doing the portion of the testing or interviewing with which he or she felt most comfortable. In the villages of Manokotak and Togiak, testing was completed prior to the arrival of the investigator. The completed tests and interviews were checked for accuracy and completeness and any omissions remedied. Due to weather conditions, it was not possible for the investigator to reach Kwigillingok or Kongiganak, therefore testing was completed without supervision. Three of the Togiak testers accompanied the investigator to Chevak and Hooper Bay. Every effort was made to allow the testers to work autonomously and, in fact, they required little assistance.

Statistical Procedures

This study, in general, proposed to examine whether conclusions from a study such as Peal and Lambert's (1962) were applicable to village Eskimo children. Therefore, statistical procedures similar to those used by Peal and Lambert were employed. Comparisons for Hypotheses I, II, and III on the various measures were made by *t* test between groups defined by sex (Hypothesis I), or by median split on the relevant variable (Hypotheses II and III). The 5% level of significance was used for all comparisons. For Hypothesis IV, scores from all relevant measures for the group as a whole were intercorrelated.

A number of study variables were necessary to execute the study. For convenience they are presented in Table 1 with the abbreviation used for each.

TABLE 1

Study Variables

Variable No.	Abbreviation	Classification	Description
1	Torl	English Language Achievement	Teacher's rating of proficiency in oral usage of English.
2	Tred	English Language Achievement	Teacher's rating of reading comprehension in English.
3	GrCl	English Language Achievement	ITPA Grammatic Closure subtest; measure of automatic habits of handling English syntax. Form.

TABLE 1--Continued

Variable No.	Abbreviation	Classification	Description
4	AudA	English Language Achievement	ITPA Auditory Association subtest; measure of meaningful use of English.
5	Ach-z	English Language Achievement	Total of z scores for variables 1, 2, 3 and 4.
6	Raven	Mental Ability	Total raw score from the two series, Sets A, Ab, and B (RCPM) and Sets C, D, and E (RPM).
7	Maze	Mental Ability	WISC Maze subtest, used without time limits. Raw score.
8	BlkD	Mental Ability	WISC Block Design subtest, standard procedures and time limits used. Scaled scores from WISC age norms.
9	Abl-z	Mental Ability	Total of z scores for variables 6, 7 and 8.
10	RCPM	Mental Ability	Total from Raven's Sets A, Ab and B only (RCPM). Raw score.
11	Sme	Attitude	Summed ratings on all 10 scales for concept of 'Self' (Wiinga), Osgood's Semantic Differential.
12	Swht	Attitude	Summed ratings on all 10 scales for concept of 'White' (Kassaq), Osgood's Semantic Differential.
13	Sesk	Attitude	Summed ratings on all 10 scales for concept of 'Eskimo' (Yupik), Osgood's Semantic Differential
14	Wht-me	Attitude	Differential evaluation. Summed rating of 'White' minus summed rating of 'Self' plus 50.

TABLE 1--Continued

Variable No.	Abbreviation	Classification	Description
15	Esk-me	Attitude	Differential evaluation. Summed rating of 'Eskimo' minus summed rating of 'Self' plus 50.
16	Wht-esk	Attitude	Differential evaluation. Summed rating of 'White' minus summed rating of 'Eskimo' plus 50.
17	Desk+me	Attitude	D-score between 'Eskimo' and 'Self'. Measures difference in profile as well as mean differences in ratings. Low D-score indicates high self-esteem or greater degree of perceived similarity.
18	Dwht+me	Attitude	D-score between 'White' and 'Self' (see description variable 17).
19	Dwht+esk	Attitude	D-score between 'White' and 'Eskimo' (see description variable 17).
20	Ques	Attitude	Questionnaire scores. Higher score indicates orientation toward 'White' way of life.
21	Sex	Other	S's sex.
22	Grad	Other	S's school grade placement.
23	Focc	Family	Father's occupation ranked from 1 through 10.
24	Msch	Family	Mother's years of schooling.
25	Fsch	Family	Father's years of schooling.
26	Psch	Family	Parent's combined years of schooling.

TABLE 1--Continued

Variable No.	Abbreviation	Classification	Description
27	inc	Family	Family's annual cash income.
28	ses	Family	Socio-economic status (income, occupation and education combined).
29	lang	Family	Language spoken in home. (All Eskimo=1, some English=2, mostly English=3.)
30	Meng	Family	Mother's proficiency in English (self rating). (Speaks well=3, poorly=2, not at all=1.)
31	CLF	Family	Combined language factor (29+30).
32	PattE	Family	Parents' attitude toward Eskimos (Bogardus). High score=positive attitude.
33	PattW	Family	Parents' attitude toward Whites (Bogardus).
34	PattI	Family	Parents' attitude toward Indians (Bogardus).
35	P'sE-W	Family	Parents' differential evaluation of Eskimos and Whites.
36	A/G	Other	Combined measure of grade placement and age of S.

CHAPTER IV

RESULTS

The initial analysis of the obtained data was undertaken to guard against combining non-homogeneous subgroups within the sample. Previous investigators, cited earlier, had found sex differences in responses to Osgood's Semantic Differential which was used in this study as a measure of attitude.

Hypothesis I. There will be significant differences in attitude toward self, Eskimos, and the English language community (Whites) reported by male Eskimo Ss and female Eskimo Ss.

Means, t values and associated probability levels for each comparison are presented in Table 2.

TABLE 2

Means, t Values, and Associated Probability Levels for Males and for Females

Variable	Males	Females	t Value	P
Ques.	12.9	14.1	.926	n.s.
Sme	66.1	66.0	.019	n.s.
Sesk	69.1	70.2	.518	n.s.
Swht	60.7	63.4	.068	n.s.
Desk+me	8.7	8.1	.721	n.s.
Dwht+me	10.1	9.4	.698	n.s.
Desk+wht	10.2	9.4	1.330	n.s.

Note - n.s. indicates not significant at the 5% level.

No significant differences were found between male Eskimo Ss and female Eskimo Ss on attitude measures. Hypothesis I was not supported.

Mental ability measures, achievement measures, and grade placement were also compared for male Ss and female Ss and no significant differences were found.

The second analysis of the obtained data was made to test the applicability of Peal and Lambert's (1962) conclusions regarding the relation between attitude toward a second language community and achievement in the second language. The sample was dichotomized into a Positive Attitude (toward the English language, "White," community) group and a Negative Attitude group. The division was made at the median of combined z scores from variable 16 (Wht-esk) and variable 20 (Ques). The difference score, variable 16, was used in preference to the simple summed rating of "White" in order to eliminate possible effects of scale-checking style. Stagner and Osgood (1946) found more intelligent Ss used the intermediary positions relatively more frequently than the polar positions on the scales.

Hypothesis II. Eskimo Ss with more positive attitudes toward the English language community (White) will achieve higher scores on English language achievement measures.

Means, t values, and associated probability levels for each comparison are presented in Table 3.

TABLE 3

Means, t Values and Probability Levels for Groups Above (Positive) and Below (Negative) the Median on Attitude Toward the English Language Community

Variable	Positive	Negative	t Value	P
Torl	3.4	3.6	.93	n.s.
Tred	3.4	3.2	.63	n.s.
GrCl	18	14.4	1.8	n.s.
AudA	14.9	12.5	1.35	n.s.

Note - n.s. indicates not significant at the 5% level.

No significant difference was found between members of the Positive attitude group and members of the Negative attitude group on measures of English language achievement. Hypothesis II was not supported. Means from ability measures also were not significantly different for the two groups. There was a significant difference ($p < .01$) in the number of years of schooling for parents of children in each group (Positive, 6.8 years; Negative, 3.9 years).

Peal and Lambert (1962) had concluded that monolingual children who see themselves, their own ethnic group, and their second language community as more similar do better in the acquisition of the second language than children who see the groups and themselves as less similar. Osgood D-scores were used as a measure of

perceived similarity in their study and will be used in the same manner in testing the third hypothesis.

Hypothesis III. Eskimo children who see themselves and the Eskimo community as similar to the English language community (White) will achieve higher scores on English language performance measures than those who do not.

The total group was dichotomized by a median split into a more-similar group and a less-similar group on the basis of combined variables 18 (Dwht+me) and 19 (Dwht+esk). Means, t values and associated probability levels for comparisons made are presented in Table 4.

Hypothesis III was not supported as no significant differences were found between the more-similar and the less-similar groups on any of the English language achievement measures.

TABLE 4

Means, t Values, and Probability Levels for More-similar and Less-similar Groups (Perceived Similarity) on English Achievement Variables

Variable	More-similar	Less-similar	t Value	P
Torl	3.2	3.7	1.83	n.s.
Tred	3.1	3.5	1.03	n.s.
GrCl	16.9	16.1	.32	n.s.
AudA	15.1	12.4	1.45	n.s.

Note - n.s. indicates not significant at the 5% level.

The fourth hypothesis referred to Peal and Lambert's conclusion that perceived similarity is more highly correlated with achievement in a second language than are measures of mental ability.

Hypothesis IV. Seeing oneself and the Eskimo community as similar to members of the English language community will be more highly correlated with achievement in English than will measures of mental ability for rural Eskimo children.

An intercorrelation matrix of scores from relevant variables is presented in Table 5. The correlations between scores from English achievement measures and scores from mental ability measures are consistently higher than those between scores from English achievement measures and measures of perceived similarity. Hypothesis IV is not supported.

Additional results from analyses of the obtained data, not directly applicable to the four hypotheses, are presented in Chapter V.

TABLE 5

Correlation Matrix of Achievement, Mental Ability, and Perceived Similarity (D-scores) Variables

	Torl	Tred	GrCl	AudA	BlkD	Raven	Maze	Desk+me	Desk+wht
Tred	.79								
GrCl	.56	.54							
AudA	.22	.37	.51						
BlkD	.17	.25	.44	.46					
Raven	.05	.29	.32	.58	.64				
Maze	.17	.30	.22	.46	.38	.33			
Desk+me	.07	.02	-.02	-.22	-.25	-.27	-.32		
Desk+wht	.09	.05	-.09	-.28	-.38	-.34	-.12	.47	
Dwht+me	.11	.07	-.07	-.34	-.33	-.32	-.15	.47	.77

Note - Single underline, $p < .05$; double underline, $p < .01$.

CHAPTER V

DISCUSSION

The fundamental question examined through the four hypotheses was whether the results of a study such as Peal and Lambert's (1962), using middle-class urban children, are applicable to children of quite different racial, cultural, and socio-economic characteristics. The nonsupport of all four hypotheses suggests that such results cannot be uncritically applied to children of differing backgrounds.

A brief examination of the differences between characteristics of village Eskimo children and those of French Canadian children may aid in understanding why conclusions based on the study of one group may not be applicable to the other. Eskimo villages in southwest Alaska are isolated to a degree that may be surprising to those unfamiliar with rural Alaska. The villages are rarely visited by non-Eskimos other than representatives of government agencies such as Public Health or Bureau of Indian Affairs. As a result, Eskimo village children have little opportunity to observe Whites in roles other than those of teacher, doctor, nurse, or pilot. The living quarters of the white school personnel are clustered around, or adjoining, the school in an area clearly separated from the village itself. In many villages only the school buildings have electricity, running water, or sewage disposal. Although many of the Whites who teach make an effort to

interact with members of the community, all are clearly a part of a discrete and alien group within the village. Consequently, village children do not have the number, or kind, of opportunities to interact with the English language community members which are available to the French-speaking child in Montreal.

The task of learning English as a second language is also very different for the Eskimo and the French Canadian child. French and English are both of the Indo-European family of languages and there is considerable overlap in their vocabularies. Eskimo is not derived from the Indo-European languages and has a completely different structure as well as a different vocabulary.

The amount of information available to the teachers of the two groups for rating English achievement is probably not the same. Teachers who rate French Canadian children share a common language and culture with them and therefore might be expected to have more information on which to base their ratings than white teachers of Eskimo children. The teacher's rating of the Eskimo child's oral achievement in English correlated neither with an index of family use of language, scores from the Auditory Association test, nor with any of the intelligence measure scores. It did, however, correlate significantly with the parents' attitude toward Whites (variable 33) and the child's orientation toward a "White" rather than an Eskimo way of life (variable 20). The teacher's rating of the Eskimo child's reading comprehension also correlates significantly with the parents' attitude toward Whites. This leads us to

suspect that we were really measuring the effect of the Eskimo community's attitude on the teacher, and her perception of the child, rather than the child's proficiency in the use of English. It does not seem to be a case of the parents' favorable attitude toward Whites encouraging the child to achieve in school as variable 33 does not correlate with either of the more objective measures of achievement (variables 3 & 4), either of the mental ability measures (variables 6 & 8) or with grade placement.

Direct comparisons of specific results from the Peal and Lambert (1962) study and those from this study are further complicated by the difference in the manner in which the Ss were selected for the two studies. Although Peal and Lambert initially contacted all the 10-year-old children in the schools used in their study, these children were then divided into three groups on the basis of both tests and self-ratings of proficiency in English. One group was classified as Monolinguals (low English proficiency), one as Bilinguals (high English proficiency), and a third group which could not be unambiguously classified as either Monolinguals or Bilinguals was not used in their study. From the original group of 364 students, a sample of 164 (75 Monolinguals and 89 Bilinguals) was selected.

This method of selection of Ss seems to imply that monolinguals and bilinguals are unique and discrete groups within the general population rather than the extreme groups, separated out, on the basis of arbitrary cutoff points, from a distribution of

school children possessing varying degrees of competence in English. The present study utilized the total population of Eskimo 10-year-olds in the six villages without regard to their relative degree of competence in English. Peal and Lambert would classify the Eskimo children as Monolinguals (low English achievement) on the basis of the criteria used in their 1962 investigation.

The difference in sample selection profoundly affects the comparisons made between the results obtained from Peal and Lambert's study and this study. The *t* test is a much more rigorous test when applied to groups defined by median split than when used with comparisons of extreme groups. Comparisons made on groups defined by median split are more likely to produce Type II errors. Hypotheses II and III were rejected on the basis of comparisons made on median split groups and should be examined further.

Hypothesis II was tested on the basis of a split of the distribution of combined variable 16 (Wht-esk) and 20 (Ques). Variable 16 does not correlate significantly with any of the measures of English achievement while variable 20 correlates significantly with Grammatic Closure test score and with the teacher's rating of oral usage of English. Variable 20, the questionnaire, assesses attitude in terms of orientation toward a "White" way of life and as such might be expected to accompany an increase in the motivation to learn English. Variable 16 (Wht-esk) is a score from Osgood's Semantic Differential, the interpretation of which

was discussed earlier. As a component of the D-score, an increase in the positive rating of White may reflect a general increase in all ratings and, as such, may not necessarily indicate a change in attitude toward the English language community. Although they are correlated (.38), the two variables (16 & 20) appear to be measuring different factors and their combination probably presents a misleading understanding of the relation between attitude and achievement in English. It should be noted that although an orientation toward the "White" way of life (Ques) is associated with higher scores on measures of the use of the form of English, it is not associated with superior performance in the meaningful use, or mastery of content, of English.

Comparisons between groups dichotomized on the basis of Osgood D-scores (variables 18 and 19) were used to test the third hypothesis; that Eskimo Ss who see themselves and the Eskimo community as more similar to Whites will achieve higher scores on measures of English achievement. The validity of the interpretation of the D-score as a measure of perceived similarity was questioned in the discussion of measures of attitude in Chapter II. Comparisons of the mental ability and other measures for the less-similar and more-similar groups (Table 6) provide additional information relevant to the interpretation of D-scores as well as to the third hypothesis.

TABLE 6

Means, *t* Values, and Probability Levels for More-similar and Less-similar Groups on Mental Ability and Attitude Variables

Variable	More-similar	Less-similar	*t* Value	*P*
Raven	39.0	31.8	1.94	n.s.
BlkD	11.7	10.1	2.38	.05
Sme	69.3	62.8	2.47	.05
Swht	69.6	54.1	4.9	.01
Sesk	71.5	67.6	1.79	n.s.
PattW	11.6	11.6	0.0	n.s.

The WISC Block Design mean score was significantly higher for the more-similar group than for the less-similar group. The Auditory Association (see Table 4) and the Raven's mean score differences did not achieve significance although they are in the same direction as the Block Design scores. As mentioned earlier, use of the *t* test with groups defined by median split increases the probability of a Type II error. The significant correlations between scores from Auditory Association, Block Design, and Raven's and the D-scores (Table 5) suggest that a Type II error may have occurred in the comparisons of Auditory Association and Raven's tests for the two groups.

When means for the two French Canadian groups are compared, the Bilingual group is significantly higher on all 14 measures of

mental ability than the Monolingual group, and has consistently lower D-scores than the Monolinguals on all three measures of perceived similarity. Not all of the 14 verbal and nonverbal measures of mental ability used in the Peal and Lambert study are significantly correlated with Osgood D-scores, but the majority are significant at the 5% level or in the same direction.

The higher scores on ability tests associated with low D-scores is more consistent with the self-esteem interpretation of the D-score than with the inferred identification interpretation offered by Peal and Lambert (1962). Everyday observations of minority group peoples, as well as anthropological reports, demonstrate how poorly they function when they identify with a majority group model they are not likely ever to achieve.

Examination of the D-scores in the two studies and how they were achieved brings to light additional data relevant to the interpretation of the D-score. The Eskimo more-similar group rated themselves and Whites significantly higher than did the less-similar group (Table 6). Eskimos also are rated higher by the more-similar group, although that difference does not reach significance, possibly because of the ceiling effect of consistently higher ratings of Eskimos by most members of both groups. Decrease in D-scores is achieved by the movement of all three concepts toward the positive end of the scale. This is more consistent with Shell, O'Malley, and Johnsgard's (1964) findings that "inferred identification" can be interpreted as "distance from positive

concepts" than it is with Peal and Lambert's (1962) interpretation of the D-score as a measure of perceived similarity. The mean of the rating of the parents' attitude toward Whites is the same for both groups which is also more consistent with the interpretation of the D-score as a measure of "distance from positive concepts" or self-esteem.

For the Bilingual children (high English achievement) in Peal and Lambert's (1962) study, summed scores for the evaluation of Myself were significantly correlated with increases in both evaluation of French Canadians and of English Canadians. For the Monolinguals (low English achievement), however, increased inferred identity (lower D-scores) between Myself and English Canadians is significantly correlated with a decrease in summed evaluation of Myself. If the Bilinguals and Monolinguals are considered to be the extreme groups from a distribution of 10-year-olds, the cited results are consistent with the interpretation of Osgood D-scores as measures of "distance from positive concepts" or self-esteem.

The interpretation of D-scores in research on minority group children is important in terms of its implications for educational programs. The use of the D-score as a measure of identification with the dominant ethnic group could lead to programs emphasizing the acculturation of minorities, or, to use a term thought by anthropologists to be the more accurate one, deculturization. Perceived similarity also emphasizes minimizing cultural differences. If, however, the D-score is interpreted as a measure of

"distance from positive concepts," or self-esteem, then programs encouraging pride in self and one's own culture might be generated. Such programs would put emphasis on cultural identity and self-esteem as correlates of acceptance of the second language or cultural group.

Validation for the superiority of the Osgood D-score over simple summe ratings of self is yielded by this study as well as in Peal and Lambert's (1962) study. More than twice as many ability and achievement measures in both studies were significantly correlated with D-scores than with summed ratings. Perhaps the D-score comes closer to measuring self-image as described by Dreyer (1971): "a complex concept which should be seen in the context of a total cultural setting" (p. 2).

How self-esteem may affect a child's performance can be seen by comparing scores village by village. The significance of the differences between villages was tested by an analysis of variance, the results of which are presented in Table 7. Those measures which showed significant differences were further analyzed by Kramer's extension of Duncan's multiple range test to group means (Kramer, 1956). The results of the multiple range test are presented in Appendix C.

Mean scores on tests of mental ability and the meaningful use of English were highest for Ss in those villages whose children ranked highest in self-esteem (low D-scores), without regard to parents' education, parents' attitude toward Whites, or the

TABLE 7

Mean Scores by Village

	Manokotak	Togiak	Kongiganek & Kwigillingok	Chevak	Hooper Bay	F Ratio	Probability
AudA	17.3	16.2	11.9	11.2	14.3	1.47	n.s.
BlkD	11.8	12	9.7	10.4	10.9	1.13	n.s.
Raven	47	44.5	30.8	27.9	35.4	4.01	.01
Dwht+esk + Dwht+me	15.6	15.5	21.8	25.6	16.3	6.45	.01
Swht - Sesk + 50	40	43	40	34	54	4.85	.01
PattW	14.6	8	1.4	17.6	13.1	8.78	.01
Psch	5.7	2.8	7.5	3.7	7.8	4.5	.01
CLF	2.9	2.3	4.1	2.8	3.1		n.s.

Note - n.s. indicates $p < .05$.

language spoken in the home. It is not likely to be merely a case of brighter children having higher self-esteem as the children from Chevak and Hooper Bay were selected from essentially the same population. Group differences in genetic endowment are unlikely as the two villages are not far apart and intermarriage has been common for many years.

When correlations for the group as a whole are examined, the most significant factor associated with the Eskimo child's achievement in English is his performance on measures of mental ability. The relation between those measures of mental ability and his self-esteem can be seen both in the village-by-village analysis and in the significant correlations between the types of measures for the whole group. The language used in the home does not seem to be a factor in the Eskimo child's English language achievement, nor does his mother's ability to speak English. These results add to the already considerable theoretical support for the opinions expressed in Andersson and Boyer (1970). They believe a bilingual teaching program will build self-esteem and raise second language achievement levels more effectively than will community use of inadequate English.

As a group, the performance of the Eskimo children on tests of mental ability compares favorably with that of Caucasian standardization groups. The mean score for the Eskimo children on the RCPM (25.6) is at the 50%ile of Raven's norms. The mean score on the WISC Block Design (10.9) is significantly higher than that of

Weschler's standardization group ($p = .05$), lending additional support to Kleinfeld's (1970) report on the cognitive strengths of Eskimos.

The mean score for the Auditory Association subtest would place the average Eskimo at the six year, nine month level. The Grammatic Closure subtest mean is equivalent to the performance of a five year, ten month old child by national age norms.

CHAPTER VI

SUMMARY

In recent years there has been increasing interest in the effects of bilingualism on cognitive growth and on the bilingual's attitude toward himself and his two language communities. One of the most widely quoted studies on bilingualism is that of Peal and Lambert (1962) who dealt with the relation between intelligence, attitude, and achievement in English as a second language for French Canadian children in Montreal. They concluded that: (a) children with more positive attitudes toward their second language community have higher levels of achievement in that language; (b) children who see themselves and their own ethnic group as more similar to their second language group also have higher levels of achievement in the second language; (c) for children whose skills in English are less than in French, this perceived similarity is more highly correlated with measures of achievement in the second language than are measures of intelligence.

The present study proposed to investigate whether such conclusions, which came from a study of urban middle-class children who share a western European background with their second language community, could be applied to village Eskimo children learning English. Although Peal and Lambert did not discuss sex differences, such differences had been noted in responses to the Osgood Semantic Differential (the attitude measure used) and therefore these two tests were included in the investigation.

A total of 56, 10-year-old Eskimo children in six villages in southwestern Alaska were tested and their families interviewed. All testing and interviewing was done in Yupik dialect by natives of the area. Achievement in English was measured by teacher's ratings and two subtests from the ITPA. Mental ability measures were nonverbal and included the Block Design and Maze subtests from the WISC and the Raven's Matrices. Attitude was measured by a questionnaire and the Osgood Semantic Differential. Additional information on the parents' attitudes, use of English, education, and economic status was obtained from interviews with the families of the children tested.

The data obtained were analyzed by the *t* test to compare means of groups derived from a median split on the basis of the variable in question, and by intercorrelation of all relevant variables. Mean scores on the attitude measures for boys and for girls were compared and no significant differences were found, nor were there significant differences between the sexes on intelligence and achievement measures. The previously cited conclusions drawn by Peal and Lambert from their study of French Canadian children were not found to be directly applicable to village Eskimo children, although there were some similarities in results gained from the two studies.

For village Eskimo children, attitude, in terms of desire to emulate the White's way of life, is related to the mastery of form, but not to the mastery of the content, of English. Ability, as

measured by nonverbal tests is the major factor in their mastery of the content and meaningful use of English. Attitude, in terms of positive or negative rating of Whites as a group, is not significantly related to achievement in English, nor is the use of English in the home. Attitude toward self, as expressed in Osgood D-scores, emerges as a significant factor affecting the performance of Eskimo children on measures of mental ability and in achievement in the meaningful use of English.

Although the standard of living in general, and of medical care in particular, is low in the villages, the children show no evidence of decreased intellectual functioning. The mean score for the Eskimo children tested on the RCPM is at the 50%ile of Raven's norms and their mean score on the WISC Block Design is significantly higher than that of the standardization population. On the ITPA subtests their performance was from three to four years below the age norms of white children for whom English is the first language.

The building of a healthy and confident self-image has been proposed as one of the educational benefits of a bilingual instructional program (Andersson & Boyer, 1970); however, little hard data on the relationship between self-image and academic achievement have been available. This study offers some evidence of a measurable relationship between self-image and the intellectual functioning of minority group children.

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APPENDICES

APPENDIX A

VILLAGE DEMOGRAPHIC DATA

Village	Manokotak	Togiak	Kongiganak & Kwigillingok	Hooper Bay	Chevak
Total village population	214	383	338	490	387
Total school enrollment	63	126	105	224	146
Ss, male	3	6	4	7	12
Ss, female	4	3	4	8	5
Ss, total	7	9	8	15	17
Homes where no English is spoken	4	7	3	10	9
Homes where some English is spoken	3	2	5	5	8
Mothers who speak no English	3	3	0	1	6
Mothers who speak English poorly	2	6	4	9	8
Mothers who speak English well	2	0	4	5	3
Mean number years parents' education	5.7	2.8	7.5	7.8	3.7

Test administrators:

Manokotak: Mary Toyukuk and Nancy Gamechuk

Togiak: John Bavilla, Martha Bavilla and Joe Alexi

Kongiganak and Kwigillingok: Sadie David and Helen Jimmy

Hooper Bay: John Bavilla, Moses Kritz and Joe Alexi

Chevak: John Bavilla, Moses Kritz and Joe Alexi

APPENDIX B

SCALE FORMAT, OSGOOD SEMANTIC DIFFERENTIAL

SAMPLE

Fox

Fast ——— Slow

Porcupine

Fast ——— Slow

MYSELF -- WIINGA

GOOD
assirtuq ——— BAD
assiituq

CLEAN
iqaituq ——— DIRTY
iqauq

STRONG
pinirtuq ——— WEAK
piniatuq

GOOD LOOKING
kenegenarquq ——— UGLY
ikiuguq

LIAR
iqluyuituq ——— NOT LIAR
iqlungartuq

WISE
usevituuq ——— FOOLISH
useviituq

KIND
naklegtartuq ——— CRUEL
nalegituq

HELPFUL
kusegurtartuq ——— NOT HELPFUL
kvsegurtaituq

BRAVE
cacetuuq ——— NOT BRAVE
caceskituq

LIKES TO WORK
caliyunqeqtuq ——— LAZY
caliyunqegiatuq

FRIENDLY
ilaliunqegtuq ——— UNFRIENDLY
ilaliunqeggiatuq

GENEROUS
qunuituq ——— SELFISH
qunutungartuq

SAMPLE INTERVIEW WITH PARENT

1. Is Eskimo spoken in your home: all of the time, some of the time or very little of the time?

2. What is the occupation of:

   Mother _____

   Father _____

3. How many years of schooling?

   Mother _____

   Father _____

4. About how much cash income does the family receive each year?

5. How many people are in the family?

6. Do you (the mother) speak English well, poorly or not at all?

APPENDIX C

MULTIPLE RANGE TESTS TO GROUP MEANS FOR CHEVAK (CH), MANOKOTAK (M), TOGIAK (T), HOOPER BAY (HB), AND KONGIGANAK/KWIGILLINGOK (K)

Raven	CH	K	HB	T	M
$\bar{X}$	27.9	30.8	35.4	44.5	47.0

Desk+wht + Dwht+me	T	M	HB	K	CH
$\bar{X}$	15.5	15.6	16.3	21.8	25.6

Swht-Desk+50	CH	K	M	T	HB
$\bar{X}$	34	40	40	43	54

PattW	K	T	HB	M	CH
$\bar{X}$	1.38	8.00	13.1	14.0	17.6

Peduc	T	CH	M	K	HB
$\bar{X}$	2.8	3.7	5.7	7.5	7.8

Note - Any two treatment $\bar{X}$s underscored by the same line are not significantly different. Any two treatment $\bar{X}$s not underscored by the same line are significantly different.